



Relative abundance of Round Goby in a brackish Danish Fjord

Christoffersen, Mads

Publication date:
2015

Document Version
Peer reviewed version

[Link back to DTU Orbit](#)

Citation (APA):
Christoffersen, M. (Author). (2015). Relative abundance of Round Goby in a brackish Danish Fjord. Sound/Visual production (digital)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



Relative abundance of Round Goby in a brackish Danish Fjord

Mads Christoffersen

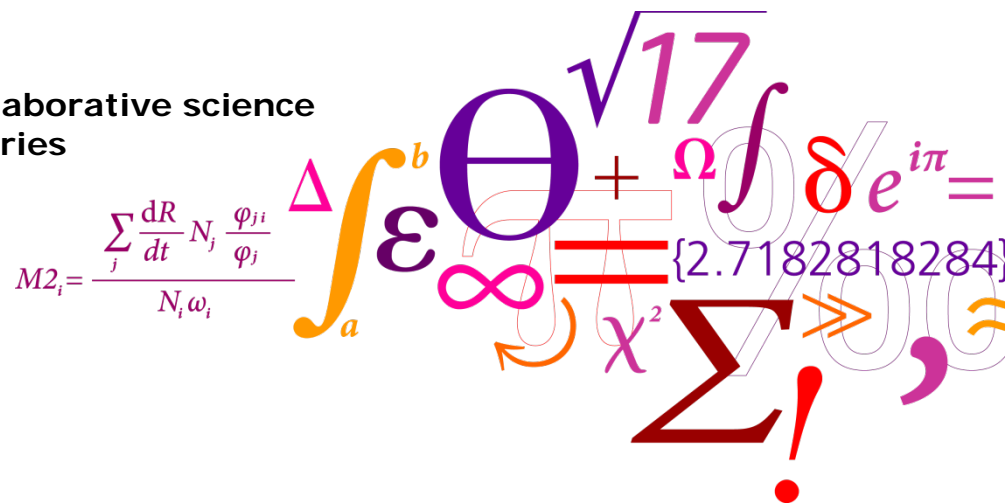
DTU Aqua

For the workshop: **Round goby – need for collaborative science
and management in Nordic and Baltic countries**

September 4-5, 2014 Charlottenlund Castle

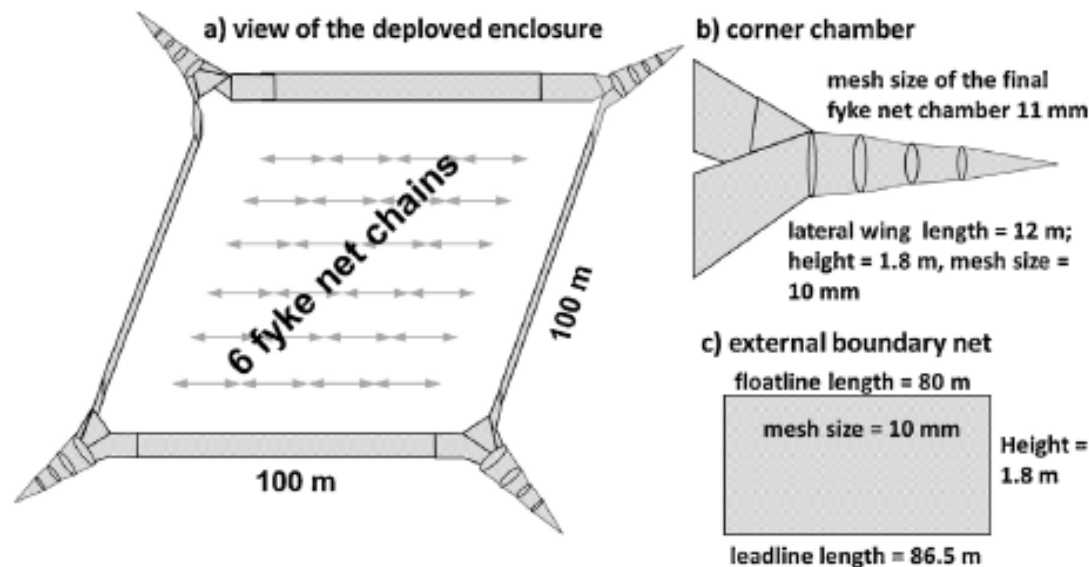
DTU Aqua

National Institute of Aquatic Resources



How to monitor the round goby?

- New monitoring approach used in Germany to quantify stock size of coastal European eel
- This monitoring was used in Denmark for the first time
- Consists of two parts
 - A) External part - boundary net (100x100 m=1ha). Fyke net chambers in each corner
 - B) Inside area - 6 chains of 5 double chamber fykes



From Ubl & Dorow 2014



Location

- Karrebæk and Dybsø Fjord – South western part of Zealand
- Fishermen observed the round goby in the fjord for the first time in 2009-2010

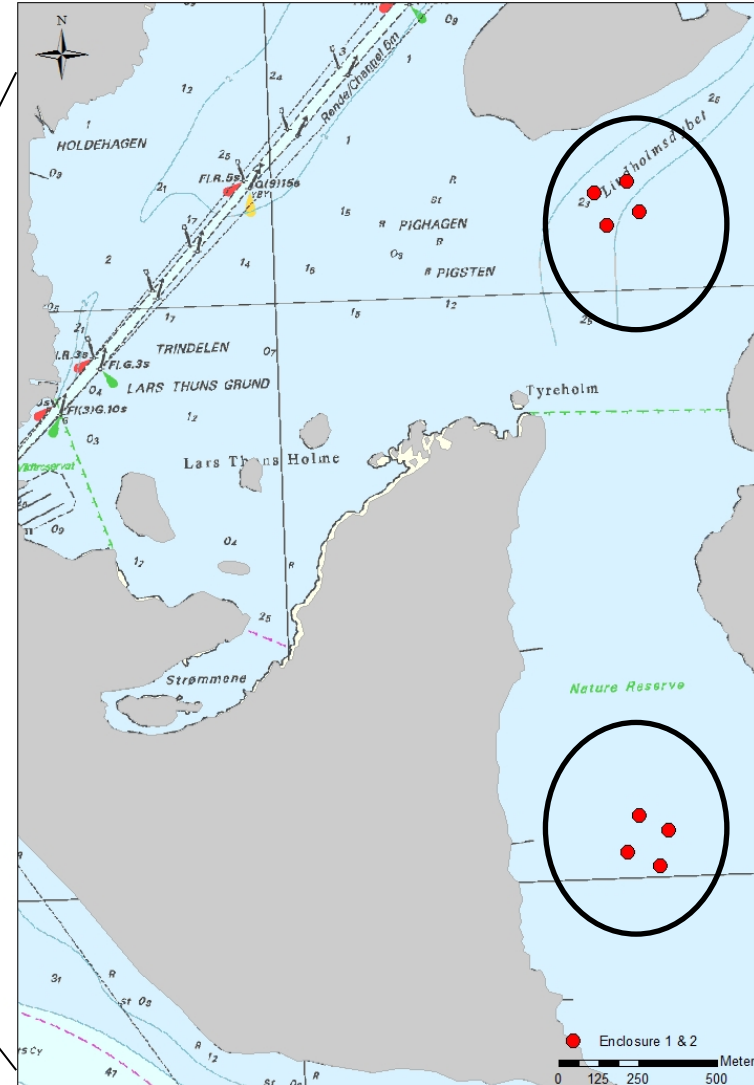


Photo: Henrik Carl



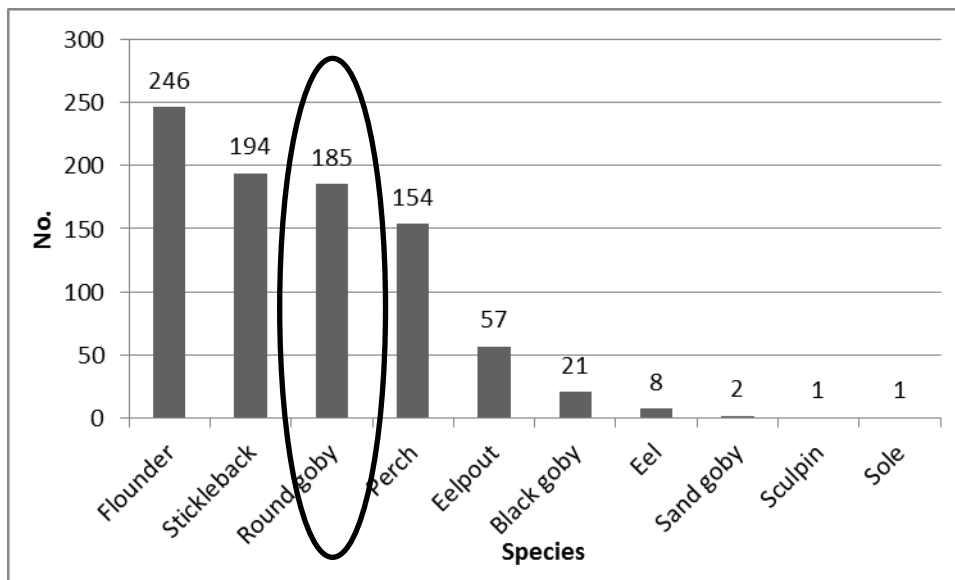
Location

- Observations made in June 2014
- Two enclosures in Karrebæk Fjord
- Fishing time was 48 hours



Results – overall

- Ten species with a total catch of 869 fish (5-81 cm)
- No pelagic species
- Flounder the most dominant fish species
- 185 round goby caught in total
- 21 % of total catch

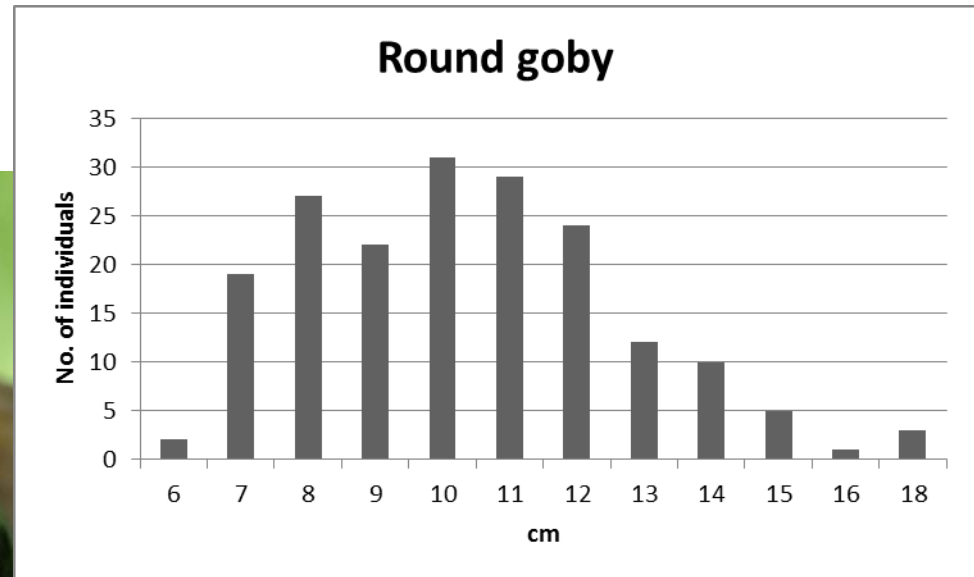


Results - round goby

- From 6–18 cm (avg. 10.3 cm)
- Most individuals between 7–12 cm



Photo: Henrik Carl



Results - round goby

- Enclosure experiment covered 1 ha each – in total 2 ha
- A total of 185 round gobies found
- From length/weight relationship the total weight of the round gobies in the enclosures was 4200 g
- The total biomass of round gobies in Karrebæk fjord is estimated to be 8400 kg

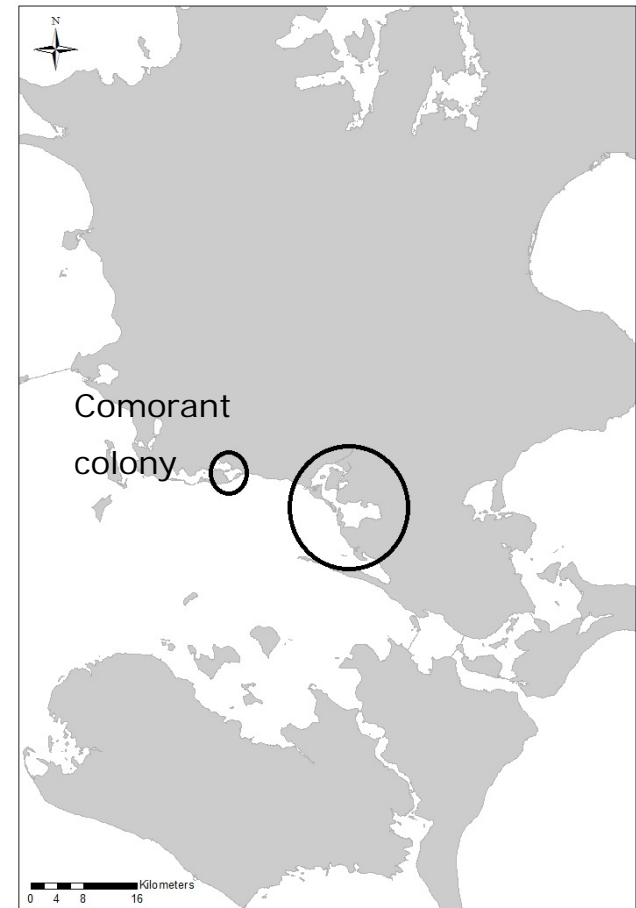


Photo: Mads Christoffersen



Predators – Great Cormorant

- Ormø colony is a large cormorant colony
- 1000 nests ~ 4000 birds
- 15 km from Karrebæk Fjord





Predators - Great Cormorant

- Visited the colony a few times – small island – totally invaded by cormorants





Predators - Great Cormorant

- Revealed several half-eaten fish under the nests
- PIT tagged smaller eels were released in the fjord in June 2014 to document if cormorant forage in Karrebæk Fjord



Predators - fish

- Recreational fishermen soon discovered that predatory fish liked the round goby

Photo: Gordon P. Henriksen



Photo: Gordon P. Henriksen



Predators - fish

- Small eel stocked in Karrebæk fjord in 2011-12





Predators - fish

- In 2014 turbot were stocked
- Hopefully some of these fish will use the round goby as their prey



Photo: Mads Christoffersen



Perspectives

- The impact of the round goby on the trophic dynamics in the system needs to be investigated
- More effective field experiments with specific focus on the round goby is needed
- Stomach content in predators (eel, turbot etc.) should be investigated
- Do mesocosm experiments with/without the round goby to study behaviour and interactions with other fauna
- The potential for round goby as a food source for commercial and recreational important fishes should be explored

Thank you

Thanks to
Niels Jepsen
Michael I. Pedersen
Malthe Dorow
Peter Möller
Bodo Dolk
Jeff Rømer
Marie Brousse

